CLAIMS

1. A digital equipment system comprising:

    a. a host for sending commands to read or write files having sectors of information, each sector having and being modifiable on a bit-by-bit, byte-by-byte or word-by-word basis, said host being operative to receive responses to said commands;

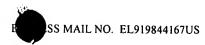5   b. a controller device responsive to said commands, and including,

    one-time-programmable nonvolatile memory for storing information organized into sectors, based on commands received from the host and upon receiving commands from the host to re-write a sector, the controller device for re-writing said sector on a bit-by-bit, byte-by-byte or word-for-word basis.
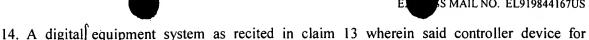
10

1

1 2. A digital equipment system as recited in claim 1 wherein said one-time-programmable

2   nonvolatile memory includes a system area and a data area, said system area for storing

3   information pertaining to the organization of the information stored or to be stored in the

4   data area.

1 3. A digital equipment system as recited in claim 2 wherein said sytem area includes storage

2   areas for including Original Engineering Manufacturer (OEM) identification/Bidirectional

3   Input/Output System (BIOS), a File Allocation Table (FAT) 1, a FAT 2 and root disk

4   directory information.

1 4. A digital equipment system as recited in claim 1 wherein said controller device further

2   includes a first buffer for storing a host-provided sector and a second buffer for storing

3   sectors stored or to be stored in the one-time-programmable nonvolatile memory.

Lexar – 0080US

1 5. A digital equipment system as recited in claim 4 further including a comparator coupled

2 between said first and second buffer for comparing a sector to be modified or accessed by the

3 host with those sectors to which information has been previously written.

1 6. A digital equipment system as recited in claim 1 wherein during power-up, said controller

2 device for identifying the end-of-file, wherein the location following the location in which

3 the end-of-file resides is identified as the location for the start-of-file of a new file to be

4 stored.

1 7. A digital equipment system as recited in claim 6 wherein said end-of-file is identified by the

2 use of a flag.

1 8. A digital equipment system as recited in claim 1 wherein said files are digital photographs.

1 9. A digital equipment system as recited in claim 1 wherein said files are archives.

1 10. A digital equipment system as recited in claim 1 wherein said controller device maintains a

2 correlation between logical addresses and physical addresses for translating host-provided

3 addresses to addresses recognized by the one-time-programmable nonvolatile memory.

1 11. A digital equipment system as recited in claim 10 wherein said controller for maintaining

2 track of defective locations within the one-time-programmable nonvolatile memory.

1 12. A digital equipment system comprising:

2 a. a host for sending commands to read or write files having sectors of information, said

3 host being operative to receive responses to said commands;

4 b. a controller device responsive to said commands, and including,

5 one-time-programmable nonvolatile memory for storing information organized into

6 sectors, based on commands received from the host, and upon commands from the host to re-

7 write a sector, said one-time-programmable nonvolatile memory including a spare area, said

8 controller for mapping sectors being re-written to spare area.

1 13. A digital equipment system as recited in claim 12 wherein said one-time-programmable

2 nonvolatile memory further includes a system area and a data area.

Lexar – 0080US

13

14. A digital equipment system as recited in claim 13 wherein said controller device for identifying a start-of-file location and an end-of-file location and a defective sector location within the one-time-programmable nonvolatile memory, the latter of which is skipped over when writing sectors.

15. A digital equipment system as recited in claim 14 wherein the information that was to be written to the defective sector is instead written to the spare area location.

16. A digital equipment system as recited in claim 12 wherein said controller for determining if there is no start-of-file identifier at a location following a corrupted sector or there is no end-of-file in the rest of the one-time-programmable nonvolatile memory, such location identified as a corrupted sector due to power failure and designated accordingly so as to prevent future storage of information therein.

17. A digital equipment system comprising:

a. a host for sending commands to read or write files, said host being operative to receive responses to said commands;

b. a controller device responsive to said commands, and including,

one-time-programmable nonvolatile memory for storing files and identifying the start-of-file and end-of-file for a file being stored within the one-time-programmable memory, wherein during power-up, said controller device for identifying the end-of-file of a stored file, the location following the location in which the end-of-file resides being identified as the location for the start-of-file of a new file to be stored.

18. A digital equipment system comprising:

a. a host for sending commands to read or write files having sectors of information, said host being operative to receive responses to said commands;

b. a controller device responsive to said commands, and including,

5   one-time-programmable nonvolatile memory having spare locations for storing sector

6   information, said one-time-programmable nonvolatile memory for storing information

7   organized into sectors based on commands received from the host and upon receiving a

8   command from the host to re-write or update a sector, the controller device for writing the

9   updated sector to a spare location.

1

1   19. A digital equipment system comprising:

2   a. a host for sending commands to read or write files having sectors of information, each

3   sector having associated therewith an error correction code (ECC) indicative of the

4   corruption of sector information, said host being operative to receive responses to said

5   commands;

6   b. a controller device responsive to said commands, and including,

7   one-time-programmable nonvolatile memory for storing information organized into

8   sectors, wherein said controller checks the ECC of a particular sector for a determination of

9   whether or not the particular sector is corrupted and if so, reads the information stored within

10   the next sector and determines if the next sector information is in a non-programmable state

11   and if so or the ECC associated with the next sector indicates that the next sector information

12   is corrupt, the controller device identifies an end-of-file.